



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION:	BR700-715A1-30	BYPASS RATIO:	4.7
UNIQUE ID NUMBER:	4BR005	PRESSURE RATIO ( $\pi_{00}$ ):	28.8
COMBUSTOR:	Improved fuel injector		
ENGINE TYPE:	MTF	RATED THRUST ( $F_{00}$ ) (kN):	83.2

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	0.5	50.1	46.6	5.6
AS % OF ORIGINAL LIMIT	2.5	42.5	47.8	22.4
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			59.7	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			70.3	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			78.7	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			91.8	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.831	0.05	0.66	20.97	4.3
CLIMB OUT	85	2.2	0.686	0.06	0.63	16.43	4.0
APPROACH	30	4.0	0.240	0.02	4.05	8.75	0.8
IDLE	7	26.0	0.100	0.11	19.72	3.95	0.1
LTO TOTAL FUEL (kg) or EMISSIONS (g)			339	25	3390	3340	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				0.3	40.8	40.2	4.3
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.03-0.66	40.21-41.37	39.09-41.16	3.85-4.74

### ACCESSORY LOADS

POWER EXTRACTION	0	(kW)	AT	-	POWER SETTINGS
STAGE BLEED	0	(% CORE FLOW)	AT	-	POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	100.9-101.3
TEMPERATURE (K)	294.4-297.2
ABS HUMIDITY (kg/kg)	0.0072-0.0075

### FUEL

SPEC	AVTUR
H/C	1.93
AROM (%)	16.6

MANUFACTURER: Rolls-Royce Deutschland  
 TEST ORGANIZATION: BMW Rolls-Royce GmbH  
 TEST LOCATION: Dahlewitz  
 TEST DATES: 29/06/1999

### REMARKS

1. Data from certification report E-TR346/99 (FR) ISS00.
2. Incorporating improved fuel injector.

Compliance with Fuel Venting requirements: -

('x' if complies, 'PR' if pre-regulation, '-' if information is not available)